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Defense Exportability

Update

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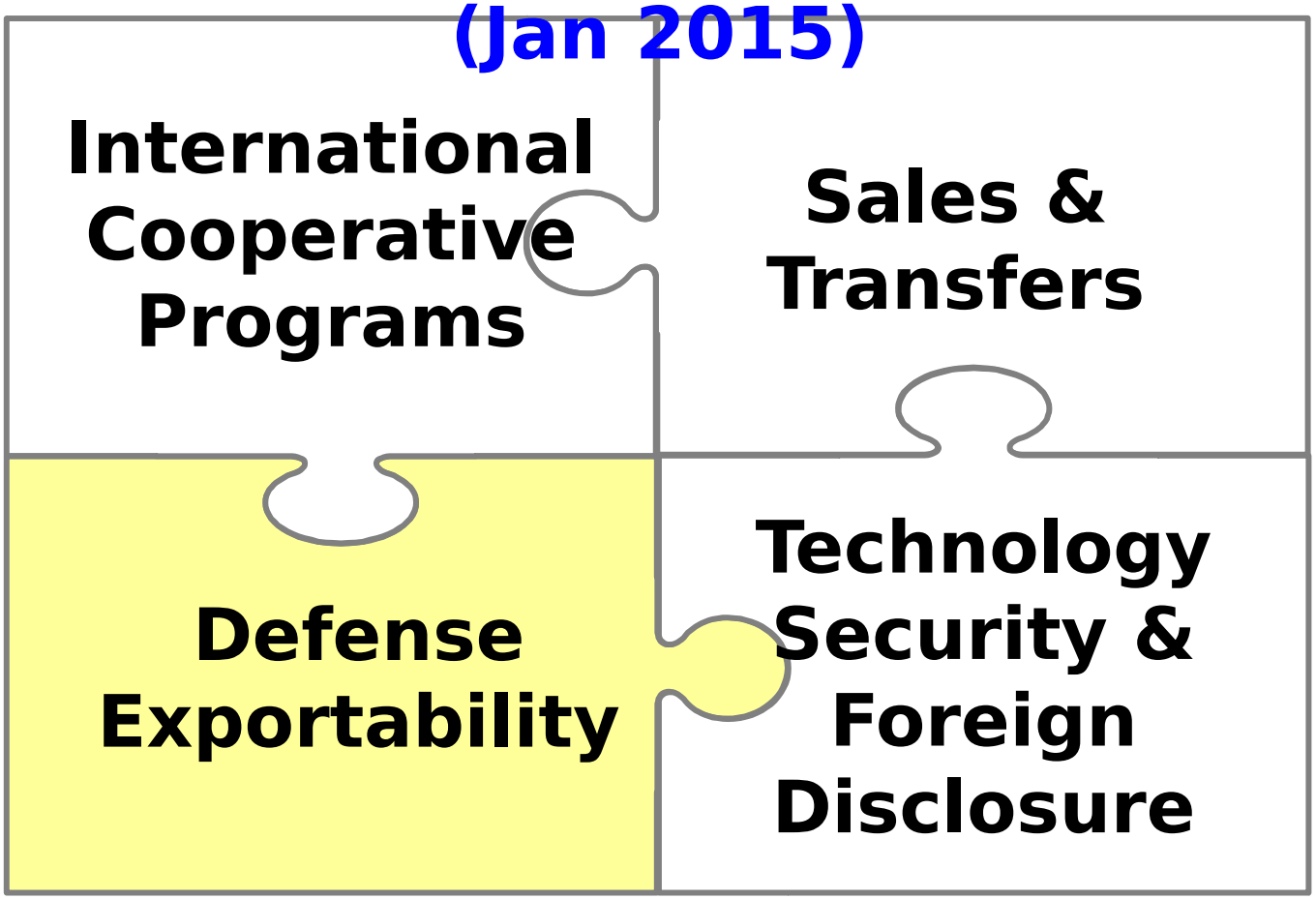
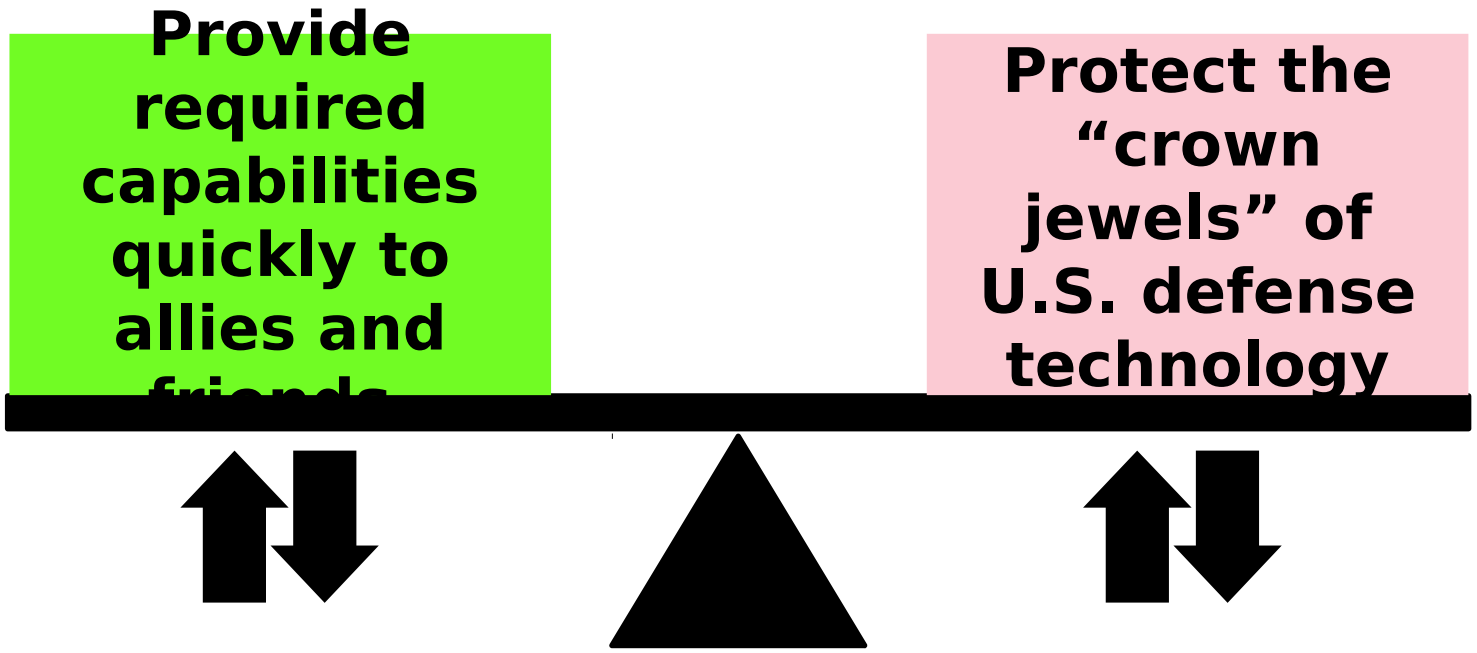
International Acquisition & Exportability (IA&E)

New in DoDI 5000.02 (Jan 2015)



The Dilemma

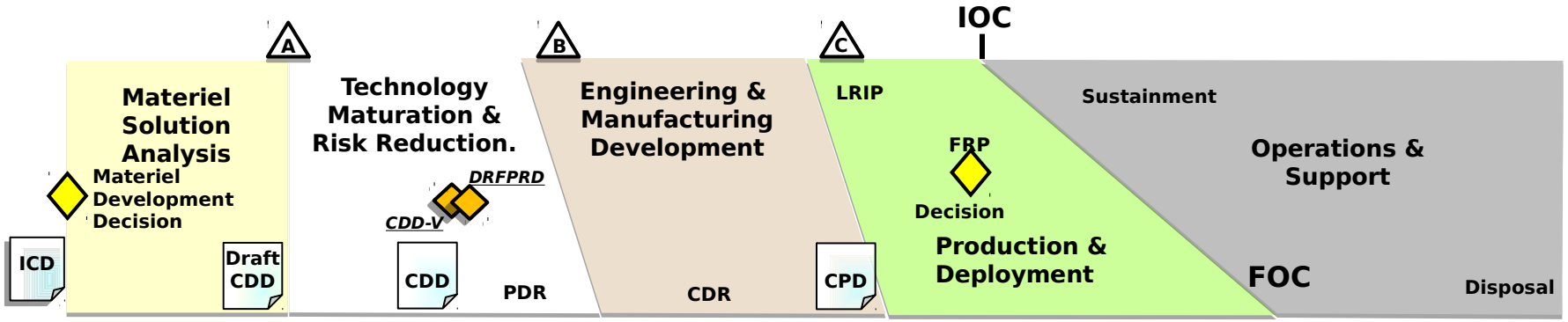


Will the new Defense Exportability Features (DEF) initiative help?

Designing for Exportability

Past	• Launch customer paid for technology security modifications to DoD configuration • Expensive and time consuming mods inhibit foreign sales
Present	• Defense Exportability Features (DEF) Pilot Program authorized by Congress in FY11 and subsequent Nat'l Defense Authorization Acts • OSD and the MILDEPs have selected 15 programs to participate as DEF Pilot Programs • Authorizes expenditure of DoD funds to evaluate exportability and facilitate
Why	• Improves protection of Critical Program Information (CPI) and critical functions using Anti-Tamper (AT)/Cyber measures • Reduces overall DoD and foreign program

Defense Exportability Activities



Activities Require MDA Approval

Exportability Assessment	Exportability Feasibility Studies	Exportable Designs	Exportable Version Production	Exportable Version Depot & Spares
• Projected sales • Technology complexity	• Conducted with program contractor • Included in TMRR contract • Funded by program or DEF PE • Industry provides 50%	• Funded by program, cooperative program or customer, or industry (or combination) • May be multiple configurations	• Funded by customer • May be multiple configurations	• Funded by customer

Systems Engineering

- **Protect Critical Technology**
- **Enhance the Exportability of Defense Systems**
- **Facilitate International Cooperative Programs**
- **Promote Allied and Friendly Nation Interoperability**

System Security Engineering

- **Integrating process for mitigating and managing risks to advanced technology and mission-critical system functionality**
- **Provides the functional discipline within SE to ensure that security requirements are included in the engineering analysis**
- **Should include an assessment of security criteria that sets limits for:**
  - **International Cooperative Programs**
  - **Foreign Military Sales**
  - **Direct Commercial Sales**
- **From this assessment; engineering, hardware, and software alternatives (i.e. export variants and anti-tamper provisions) should be identified that would permit such**

Critical Program Information

DoD CPI Policy:

- Protect CPI to maintain U.S. warfighter operational and technological advantages
- Identify CPI early (and reassess periodically) to implement CPI protection and countermeasures throughout RDT&E programs' lifecycles
- Ensure horizontal CPI protection measures (anti-tamper, exportability features, security) are consistently and efficiently applied across RDT&E programs
- Integrate and synchronize CPI protection measures in Program Protection Plans (PPPs)

Definition of CPI :

"U.S. capability elements that contribute to the warfighters' technical advantage, which if compromised, undermines U.S. m[illegible]e, but are not limited to, software algorithms and specific

DoDI 5200.39 (May 2015) New

Program Protection

"Program protection also supports international partnership building and cooperative opportunities objectives by enabling the export of capabilities without compromising underlying U.S. technology advantages."

Program managers will describe in their [Program Protection Plan] PPP the program's critical program information and mission-critical functions and components … [including] planning for exportability and potential foreign

DoDI 5000.02 (Enclosure 3, paragraph 13)
New

Program Protection Plan (PPP)
-- DAG Chapter 13.2. --

- **System development document focused on identification and protection of CPI as well as mission critical functions and components**
- **Milestone A and B PPPs should include areas such as:**
  - Program's potential for ICP efforts (including S&T) and future foreign sales
  - Initial TSFD and defense exportability activities including:
    - Candidate CPI identification for domestic and export configurations
    - Potential defense exportability system security design risk mitigation measures (anti-tamper, differential capabilities)
    - Summaries of threats/risks/cost using format contained in OUSD(AT&L) Memo of July 18, 2011
- **S&T Community may participate in system**

Program Protection Plan (PPP)

- Single source document
- Comprehensive protection
- Objective: Prevent exploitation of U.S. technology or the development of countermeasures to U.S. defense systems
- When: As soon as CPI is identified, should be approved at Milestone A; must be updated at subsequent Milestones
- Responsibility: PM
- Approval: MDA

PPP Template

Per USD(AT&L) Memo of July 18, 2011 …

- Introduction
- Program Protection Summary
- CPI and Critical Components
- Horizontal Protection
- Threats, Vulnerabilities & Countermeasures
- Other System Security Related Plans/Documents
- Program Protection Risks
- Foreign Involvement
- Processes for Mgmt and Implementation of PPP
- Processes for Monitoring and Reporting Compromises
- Program Protection Costs
- Appendices A – E

DEF Dimensions

Differential Capability

- Design, develop, and test modifications to the DoD configuration that incorporate partner/customer nation unique capabilities and remove (and confirm the removal of) U.S.-only capabilities/CPI to create one or more exportable versions of the system

Anti-Tamper (AT)

- System engineering activities designed into the system architecture to protect CPI against:
  - Unwanted technology transfer
  - Countermeasure development
  - Capability/performance degradation through unauthorized system intrusion/modification
- Deter, impede, detect,

Anti-Tamper (A-T)

- **A-T and FMS**
  - **ATEA coord. on LOR responses for systems containing CPI**
  - **A-T mechanisms and costs must be included in the LOA**
  - **Compliance with A-T requirements certified to DSCA**
  - **ATEA must approve A-T Plan prior to LOA offer**
  - **Satisfactory V&V testing completed before export**
- **A-T Disclosure Guidelines**
  - **Fact of A-T implementation should be unclassified**

Defense Exportability Features (DEF) Pilot Program

- **FY11 NDAA directed SECDEF to carry out a pilot program to develop and incorporate technology protection features in a designated system during the R&D phase of such system."**
- **Program Scope/Status**
  - **Identify MDAPs for which there is significant anticipated export demand and whose technical aspects are amenable to DEF**
  - **Pilot program to provide funding to evaluate exportability and facilitate planning for, design, and incorporation of exportability features during RDT&E**
  - **AT&L selects candidate programs from MILDEP nominations**
- **FY12 NDAA change**

Defense Exportability is Part of BBP 2.0

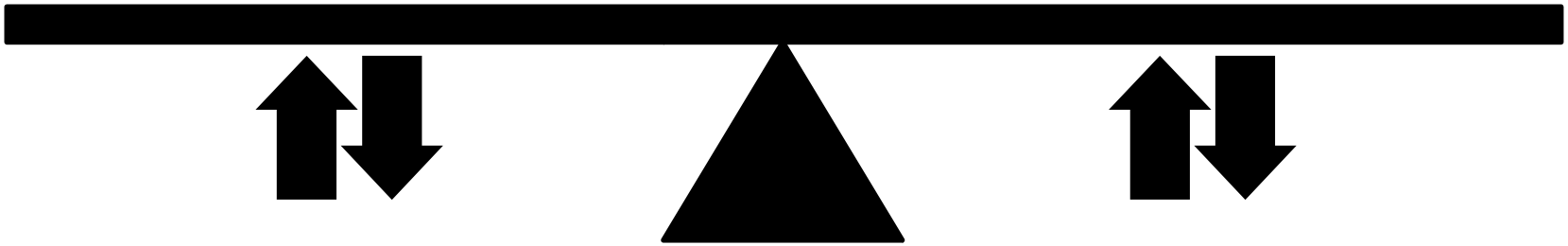
How Many Configurations?

Few

- Simpler design and test
- Simpler production and logistics
- Easier upgrades
- More affordable

Many

- Greater customer choice
- Treats countries differently
- Tailored logistics and upgrades
- More expensive



DoD and partner/customer nations must compromise to achieve optimal outcomes for all
(easy to say, hard to do)

Developing Exportable Configurations

- **At the Development RFP Release Decision and Milestone B, the MDA should determine if one or more exportable configurations should be developed**
  - **Informed by feasibility studies; requirements included in RFP**
  - **Funding sources must be identified**

ICP Funding *(various alternatives)*

Industry *(various alternatives)*

FMS or DCS customer nation funding

DSCA Special Defense Acquisition Fund (SDAF

Title 10 funding *(specific authorization & appropriation*

EMD Exportable Design & Development

- **Exportable configurations should be developed during EMD or LRIP if there is a firm commitment such as:**
  - **One or more signed ICP international agreements**
  - **One or more signed FMS LOAs**
  - **A USG-approved export of proposed U.S. industry DCS transactions**
  - **DSCA use of Special Defense Acquisition Funding (SDAF) in anticipation of FMS cases (under consideration)**
  - **Title 10 funding specifically authorized/appropriated for exportable D&D work**

A Standard Approach

PMs Should Pursue All Available Alternatives

FY12 DEF Pilot Programs

Programs	MILDEP	Contractor	Milestone
Joint Proximity/Height of Burst Fusing (HOBF)	Army	Picatinny Arsenal	Non-MDAP
Army Integrated Air and Missile Defense (AIAMD)	Army	Northrop Grumman	Post-B
Indirect Fires Protection Capability, Increment 2 – Intercept (IFPC2-I)	Army	AoA	Pre-A
Common Infrared Counter Measures (CIRCM)	Army	BAE Systems Northrop Grumman	Pre-B
MQ-4C Triton (formerly Broad Area Maritime Surveillance, BAMS)	Navy	Northrop Grumman	Post-B
Three Dimensional Expeditionary Long Range Radar (3DELRR)	Air Force	Raytheon Lockheed Martin Northrop Grumman	Pre-B

FY13-14 DEF Pilot Programs

Programs	MILDEP	Contractor	Milestone
Next Generation Jammer (NGJ)	Navy	Source Selection	Post-A
Air & Missile Defence Radar (AMDR)	Navy	Source Selection	Post-B
P-8A Poseidon	Navy	Boeing	Post-C
E2D Advanced Hawkeye	Navy	Northrop Grumman	Post-FRP
Small Diameter Bomb II (SDB II)	Air Force	Raytheon	Post-B
MQ-9 Reaper	Air Force	General Atomics	Post-C
Joint Air-to-Surface Standoff Missile (JASSM)	Air Force	Lockheed Martin	Post-C
Joint Ground to Air Missile (FY14)	Army	Lockheed Martin (LM)	Pre-B
Armed Aerial Scout and Ground Combat Vehicle	Army	N/A	N/A

Int'l Acquisition Transactions

Looking Forward -- Macro View